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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-57* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *43-45* is/are allowed.

6)☒ Claim(s) *1-4,6-11,14-17,19,25-28,30,31,33-35,37-42,46-48 and 50-57* is/are rejected.

7)☒ Claim(s) *5,12,13,18,20-24,29,32,36 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *02/08/01*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

Claims 43-45 are allowed.

Claims 5, 12, 13, 18, 20-24, 29, 32, 36 and 49 are objected to as being

dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening

claims.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 6-11, 14-17, 19, 25-28, 30-31, 33-35, 37-42, 46-48, 50-57 are rejected

under 35 U.S.C. 102(e) as being unpatentable by Finseth et al. (US 6742184).

Claim 1. Finseth discloses a method for delivering objects to one or more

receiver units (Fig. 1-3), comprising:

receiving a number of incoming objects, each object corresponding to one or

more classes (Fig. 1-2, el. 24; Col. 6, lines 13-36);

maintaining objects from a variety of classes in an object schedule (Fig. 2, el.

54; Col. 6, lines 35-42); and

delivering selected objects from the object schedule to the one or more

receiver units (Fig. 1, el. 42, 28, 30; Col. 6, lines 51-65+).

Claim 2, Finseth further discloses wherein objects from a variety of classes are maintained by determining which of the incoming objects are to be added to the object schedule and which of the cached objects in the object schedule are be evicted, such that objects from a variety of classes are maintained in the object schedule (Col. 8, lines 48-65+).

Claim 3, Finseth further discloses wherein each object has a utility factor; and the value of the utility factor is dependent, at least to some degree, on the position of the object in the object schedule (Col. 7, lines 57-Col. 9, lines 58).

Claim 4, Finseth further discloses wherein each class has a utility factor that is calculated by combining, via a sub-linear function (time function), the utility factors of those scheduled objects that correspond to the class (Col. 8, lines 26-52).

Claim 6, Finseth further discloses wherein the object schedule has an overall schedule utility factor, the overall schedule utility factor is calculated by combining via a schedule function the utility factors for each of the classes (Col. 8, lines 40-65).

Claim 7, Finseth further discloses wherein the schedule function is a summing function (entire schedule information; Col. 8, lines 40-65).

Claim 8, wherein objects from a variety of classes are maintained in the object schedule by receiving a new object; scheduling the new object in an initial position within the object schedule; and reordering the scheduled objects so that the overall schedule utility factor is increased (Col. 6, lines 50-65+).

Claim 9, Finseth further discloses wherein each object in the object schedule has an estimated time for delivery based on the position of the object in the schedule (Col. 8, lines 10-17).

Claim 10, Finseth further discloses wherein each object in the schedule has an importance factor (Col. 6, lines 60-65+).

Claim 11, Finseth further discloses wherein the utility factor for each object is dependent on the estimated time for delivery and the importance factor (Col. 6, lines 60-65+).

Claim 14, Finseth further discloses wherein each object in the schedule is a member of one or more classes, and the utility factor for each object is dependent on a Classvarietyscore of each of the member classes (Col. 7, lines 10-Col. 10, lines 27).

Claim 15, Finseth further discloses wherein the Classvarietyscore for each class is a measure of the number of member objects of the class that were previously broadcast and/or are scheduled to be broadcast (Col. 8, lines 10-40).

Claim 16, Finseth further discloses wherein the contribution of each object to the Classvarietyscore decreases with time (Col. 8, lines 48-65).

Claim 17, wherein each class has a class importance factor (Col. 6, lines 60-65+).

Claim 19, Finseth discloses a method for scheduling objects for delivery to

one or more receiver units, the method comprising:

receiving one or more incoming objects, each having a utility factor (Col. 6,

lines 13- 50);

scheduling the objects for delivery in an initial scheduling order, the value of

the utility factor for each of the objects being dependent, at least to some degree, on

the position of the object in the schedule (Col. 6, lines 52-Col. 7, lines 7);

calculating an overall schedule utility factor for the schedule by combining the

utility factors of each of the scheduled objects using a predefined function (Col. 7,

lines 10-40);

reordering the scheduled objects so that the overall schedule utility factor is

increased and delivering one or more of the objects from the top of the schedule

(Col. 6, lines 60-65+);

Claim 25, Finseth further discloses wherein the utility factor of an object is

higher than another similarly situated object if the object is more timely (Col. 8, lines

40-Col.9, lines 8).

Claim 26, Finseth further discloses wherein the utility factor of an object

increases the overall schedule utility factor more than another similarly situated

object if the object provides more variety to the object schedule (Col. 8, lines 35-40).

Claim 27, Finseth further discloses wherein each object in the schedule has

an estimated time for delivery based on the position of the object in the schedule,

and the value of the utility factor for the object is dependent on the estimated time for

delivery (Col. 6, lines 60-67).

Claim 28, Finseth further discloses wherein the estimated time for delivery of

each object is calculated by estimating a current channel bandwidth for delivery of

the scheduled objects; and calculate an estimated time for delivery for each object

using the size of each scheduled object and the estimated channel bandwidth (Col.

5, lines 28-Col. 6, lines 33).

Claim 29, Finseth further discloses wherein each object in the schedule is a

member of one or more classes, and the value of the utility factor for each class is

dependent on a measure of the objects assigned to the class (Col. 34-65+).

Claim 30, Finseth further discloses wherein the measure of the objects is the

number of objects assigned to the class (Col. 7, lines 11-32).

Claim 33 is analyzed with respect to method claim 1.

Claim 34 is analyzed with respect to method claim 3.

Claim 35 is analyzed with respect to method claim 4.

Claim 37 is analyzed with respect to method claim 6.

Claim 38 is analyzed with respect to method claim 7.

Claim 39, Finseth discloses a system for scheduling objects for delivery to

one or more receiver units is analyzed with respect to method claim 19.

Claim 40, Finseth discloses a method for transmitting one or more objects to

one or more receiver units, wherein each object has one or more data packets,

comprising:

providing a transmit time variable for each object (Col. 6, lines 13-42);

initializing the transmit time variable for each object to a predetermined value;

maintaining a timer value; calculating a score for each object, wherein the score is dependent on the difference between the transmit time variable for each object and the timer value (Col. 6, lines 51-67);

transmitting one or more packets of the object with the highest score; and setting the transmit time for the object with the highest score to the timer value (Col. 8, lines 40-65).

Claim 41, Finseth further discloses wherein each object has a transfer rate, and the score for each object is dependent on the transfer rate (Col. 6, lines 53-67).

Claim 42, Finseth further discloses determining if the last transmitted packet was the last packet of the object with the highest score; and removing the object with the highest score if the last transmitted packet was the last packet of the object with the highest score (Col. 8, lines 53-65).

Claim 46, Finseth discloses a method for transmitting one or more objects to one or more receiver units, wherein each object has one or more data packets, comprising:

providing a next transmit time variable for each object (i.e., next 5 sec; see Col. 6, lines 54-57);

initializing the next transmit time variable for each object to a predetermined value initialize with 5sec, 10 sec..; see Col. 6, lines 54-57);

selecting the object with the lowest next transmit time variable (transmit

objects to combiner every 1 sec for cycler 56A; Col. 6, lines 54-57);

transmitting one or more packets from the selected object; and incrementing

the next transmit time variable for the selected object by an incremental value (Col.

6, lines 54-57);

Claim 47, Finseth further discloses a method according to claim 46 further

comprising the step of repeating the selecting, transmitting and incrementing steps

(Col. 6, lines 53-57).

Claim 48, Finseth further discloses wherein the incremental value is

dependent on the transfer rate for the selected object (Col. 6, line 63-65).

Claim 50, Finseth further discloses determining if the last transmitted packet

was the last packet of the selected object; and removing the selected Object if the

last transmitted packet was the last packet of the selected object (Col. 8, lines 48-

52).

Claim 51, a method for scheduling objects for delivery to one or more receiver

units, the method is analyzed with respect to claim 19.

Claim 52, Finseth further discloses wherein the expected incremental value of

an object is determined by calculating the utility of the object schedule with the

object minus the utility of the object schedule without the object (Col. 8, lines 49-65).

Claim 53, Finseth further discloses wherein the expected incremental value

for each object is discounted by an exponential factor with time (time progress; Col.

8, lines 49-65).

Claim 54, Finseth further discloses wherein the priority score of an object is

related to the derivative of the discounted incremental value of the corresponding

object (in function of time; Col. 8, lines 49-65).

Claim 55, Finseth further discloses wherein the expected incremental value of

each object is related to the remaining lifetime of the object (duration time of an

object; Col. 8, lines 49-65).

Claim 56, Finseth further discloses wherein the expected incremental value of

each object is related to the freshness of the object (new object; Col. 8, lines 49-65).

Claim 57, Finseth further discloses wherein the expected incremental value of

each object is related to the timeliness of the object (start time of an object is closed

to the current time; Col. 8, lines 49-65).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hai Tran whose telephone number is 703-308-7372.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Christopher C. Grant can be reached on 703-305-4755. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

HT:ht
12/06/2004

HAI TRAN
PATENT EXAMINER